Australian National University National Security College

# Telecommunications in the Pacific Islands region

Amanda H A Watson and Ioana Chan Mow

## Key points

- Three main challenges for digital connectivity in the Pacific Islands region are cyberattacks, natural disasters, and cable protection.
- There have been numerous telecommunications initiatives in the Pacific. Nonetheless, more could be done to achieve ubiquity and resilience.
- Access to, and uptake of, telecommunications varies between Pacific Island nations.

## Policy recommendations

- The Quad could work with leaders of Pacific Island countries to ensure both access and redundancy.
- Whenever possible, it would be ideal for Quad countries to coordinate directly with local communication ministries to channel funding towards national needs and priorities.
- Alternatively, the Quad could engage with regional Pacific bodies, such as the Pacific Islands Forum and the Pacific Region Infrastructure Facility.

## Numerous initiatives thus far

### Pacific government priorities

A key aim of the Pacific Islands Forum's strategic plan is to "to ensure a well-connected region", acknowledging that partnerships will be necessary to achieve this with regard to digital technologies.[1] The term "digital transformation" has become popular in the Pacific in recent years, with countries such as Papua New Guinea and Samoa developing digital transformation strategies. As an example, Samoa's strategy, which is about to be launched, intends to adopt a whole-of-government approach to digital transformation that aims to improve people's lives, society, economy, and the government.

### Quad members

The four Quad countries have recently announced a new partnership on undersea cables that is aimed at increasing connectivity.[2] Prior to this, Quad countries had been engaged in Pacific telecommunication efforts, either individually or in other groupings. Of late, the United States (US) has established a digital connectivity initiative focused on the Pacific region called Digital Connectivity and Cybersecurity Partnership – Pacific Activity. The US, Australian and Japanese governments have pledged to provide a second cable for Palau, and the same trilateral grouping will fund a new cable in the East Micronesian region.

To assist with connectivity for Papua New Guinea and Solomon Islands, the Australian Government majority-funded the Coral Sea Cable System, which launched in late 2019. Australia provided the bulk of the funding for Australian telecommunication company Telstra to purchase Digicel's Pacific arm, which operates in six Pacific Island countries.

### Other development partners

Other development partners have been contributing to the Pacific region as well. For instance, the World Bank has a multi-year project to support internet access in Tuvalu. The government of New Zealand and the Asian Development Bank supported the Manatua cable, which connects Samoa, Niue, Cook Islands and French Polynesia.

Providing tech start-ups with adequate investment and support is another critical enabler of digital transformation, according to GSMA, the peak body for mobile network operators.[3] One such initiative is the Technology Innovation Hub in Samoa. A pre-feasibility study has now been completed and a pilot is set to commence soon. The Smart Villages and Smart Islands Initiative is a three-phase project funded by the International Telecommunication Union to empower rural and coastal communities using connectivity and digital services. It is being piloted on Manono Island in Samoa.

## Nonetheless, more could be done

### Varied access and uptake

Pacific Island countries have varied levels of telecommunication access and uptake. Guam and Northern Mariana Islands have commenced offering fifth-generation (5G) network coverage that enables high-speed internet access,[4] while some populations remain without any network coverage.[5] The uptake of mobile telephones varies greatly, from less than 30 per cent of the population in Federated States of Micronesia and Tuvalu to more than 70 per cent in American Samoa, Fiji, Guam, Niue and Palau. Internet prices and speeds vary between countries[6] and the number of undersea internet cables per country differs.[7]

### Pacific telecommunication markets

Over the past decade or two, a process of liberalisation has taken place in several markets in Pacific Island countries. Prior to that, the telecommunication sector had been dominated in most countries by a monopoly, typically either a state-owned entity or a joint government and private sector operator. The liberalisation process led to the establishment of a regulatory framework, an independent regulator, a universal access policy and the introduction of mobile market competition in Samoa[8] and similar processes in other countries. Positive outcomes of liberalisation have included expanded network coverage, dramatic increases in mobile telephone usage and reduced costs for consumers. Nonetheless, numerous small states have just one operator, and only a few have three or more.[9]

## Challenges remain, or even increase

Factors negatively influencing connectivity in the Pacific include geographical dispersion and remoteness, lack of financing in small economies, high transaction costs and elevated capital infrastructure costs. For companies operating in Pacific nations, there can be challenges negotiating with landowners and low returns due to small populations.

Three main challenges for digital connectivity in the Pacific Islands region are discussed in this paper. They are: cyberattacks, natural disasters and cable protection.

### Cyberattacks and cybersecurity

Major cyberattacks occurred in Guam in May 2023 and Vanuatu in November 2022. The Pacific Islands Forum's 2018 Boe Declaration on Regional Security called for an increasing emphasis on cybersecurity. In response, various initiatives are under way. For instance, Samoa launched a national Computer Emergency Response Team in 2019, which provides cybersecurity awareness and technical support for cybersecurity incident responses and threat management.

### Natural disasters

Natural disasters such as cyclones can damage telecommunication towers and electricity infrastructure. There have been numerous instances of undersea cable damage, with the most notable communication outage being in Tonga due to a volcanic eruption in January 2022. Tonga's international cable was repaired after more than a month,10 while domestic cable repair took much longer.

### Cable protection

Aside from natural disasters, human actions can also cause cable damage, with an earlier outage in Tonga caused by a ship's anchor.[11] International legal frameworks do not provide adequate protection for cables on international seabeds.[12]

## Recommendations and prospects for Quad cooperation

### Access and redundancy

A key theme that emerged from the Pacific Islands Telecommunication Association conference in mid-2023 was "the need for ubiquity and resilient service".[13] Therefore, it would be valuable for the Quad to work with leaders of Pacific Island countries to ensure both access and redundancy.

Specifically, to improve access, the Quad could look to extend mobile network coverage to communities that are not yet covered. In addition, Quad countries may like to support Pacific Island countries in their efforts to increase electricity access, especially in the Melanesian sub-region, as electricity is a necessary enabler of digital technology use. Where possible, electricity provision should utilise renewable sources.

To ensure that there is redundancy in terms of internet access, each Pacific Island country should have: either more than one cable; or a cable with a suitable and reliable satellite backup option. As fishing and anchoring are major causes of cable damage, the Quad could support Pacific Island nations in establishing best-practice cable protection zones.[14]

### Avenues through which to engage

Whenever possible, it would be ideal for Quad countries to coordinate directly with local communication ministries to channel funding towards national needs and priorities, which are articulated in national development strategies. It may also be beneficial if coordination could include other partners such as multilateral bodies. Another option is for the Quad to engage with the Pacific Islands Forum, the Council of Regional Organisations of the Pacific and the Pacific Region Infrastructure Facility.

## About the authors

Dr Amanda H A Watson is a research fellow with the Department of Pacific Affairs at the Australian National University. Dr Ioana Chan Mow is a professor in computing and computer education at the National University of Samoa.[15]

## About this paper

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## About the Quad Tech Network

The Quad Tech Network (QTN) is an initiative of the NSC, delivered with support from the Australian Government. It aims to establish and deepen academic and official networks linking the Quad nations – Australia, India, Japan, and the United States – in relation to the most pressing technology issues affecting the future security and prosperity of the Indo-Pacific.

## Contact


national.security.college@anu.edu.au

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## Notes

[1] Pacific Islands Forum, "2050 Strategy for the blue Pacific continent", *Pacific Islands Forum*, 2019, accessed 18 July 2023, https://www.forumsec.org/2050strategy/
[2] Pacific Islands Forum, "2050 Strategy for the blue Pacific continent", *Pacific Islands Forum*, 2019, accessed 18 July 2023, https://www.forumsec.org/2050strategy/
PERLINK "https://www.pm.gov.au/media/quad-leaders-joint-statement"https://www.pm.gov.au/media/quad-leaders-joint-statement
[3] The GSMA is a peak body for mobile network operators and it makes this argument in numerous publications.
[4] This information and all figures in this paragraph come from GSMA, "The mobile economy: Pacific Islands", *GSMA*, 2023, accessed 15 June 2023, https://www.gsma.com/mobileeconomy/pacific-islands/
[5] For example, regarding rural Solomon Islands, see G Hobbis, "The digitizing family", *Palgrave Macmillan*, Switzerland, 2020.
[6] For price information, see UN ESCAP, "Broadband connectivity in Pacific Islands countries", *UN ESCAP*, 2020, accessed 28 June 2023, https://www.unescap.org/resources/ap-policy-brief-broadband-connectivity-pacific-islands-countries. For speeds, see AHA Watson and R Fox, "Digital divide: Mobile internet speeds in the Pacific", *Pacific Journalism Review: Te Koakoa*, 2021, 27 (1 & 2):215–231.
[7] For a listing of the number of cables per country, see page 154 of AHA Watson, "The limited communication cables for Pacific Island Countries", *Asia-Pacific Journal of Ocean Law and Policy*, 2022, 7:151–155
[8] For more details and analysis, see J Meese and I Chan Mow, "The regulatory jewel of the South Pacific: Samoa's decade of telecommunications reform", *Mobile Media & Communication*, 2016, 4(3) 295–309
[9] Information on the number of operators per country is available from pages 11–12 of GSMA, "The mobile economy: Pacific Islands", *GSMA*, 2019, accessed 7 September 2020, https://www.gsma.com/mobileeconomy/wp-content/uploads/2020/03/GSMA_MobileEconomy2020_Pacific_Islands.pdf
[10] AHA Watson and GM Malungahu, "Island kingdom's communication cable repaired", *Australian Outlook*, 16 March 2022, accessed 16 March 2022, https://www.internationalaffairs.org.au/australianoutlook/island-kingdoms-communication-cable-repaired/

[11] See page 2 of S Bashfield and A Bergin, "Options for safeguarding undersea critical infrastructure: Australia and Indo-Pacific submarine cables", *National Security College*, 2022, accessed 12 July 2022, https://nsc.crawford.anu.edu.au/publication/20363/options-safeguarding-undersea-critical-infrastructure-australia-and-indo-pacific

[12] D Shvets, "The international legal regime of submarine cables: A global public interest regime," *Universitat Pompeu Fabra*, 2020, accessed 18 July 2023, https://www.tdx.cat/handle/10803/671344

See also page 7 of L Curtis and M Rasser, "A techno-diplomacy strategy for telecommunications in the Indo-Pacific", *National Security College*, 2021, accessed 8 September 2021, https://nsc.crawford.anu.edu.au/publication/19234/techno-diplomacy-strategy-telecommunications-indo-pacific

[13] PITA, "Never a dull moment at PITA 27", *Pacific Islands Telecommunication Association*, 2023, accessed 6 July 2023, https://www.pita.org.fj/news/opportunities-never-dull-at-pita-27/

[14] For an idea of how this could be done, see page 3 of S Bashfield and A Bergin, "Options for safeguarding undersea critical infrastructure: Australia and Indo-Pacific submarine cables", *National Security College*, 2022, accessed 12 July 2022, https://nsc.crawford.anu.edu.au/publication/20363/options-safeguarding-undersea-critical-infrastructure-australia-and-indo-pacific

[15] The views expressed here are those of the authors. The authors acknowledge the time and insights of the four people we spoke to: Secretary of the Papua New Guinea Department of Information and Communications Technology, Steven Matainaho; the Executive Director of the Papua New Guinea Institute of National Affairs, Paul Barker; the Chief Executive Officer (CEO) of the Ministry of Communications and Information Technology (MCIT) in Samoa, Lefaoalii Unutoa Auelua; and the Deputy CEO MCIT, Leaso Ronnie Aiolupotea.